Caregiver walkaway rates in Baby bath area: An important metric for fall prevention

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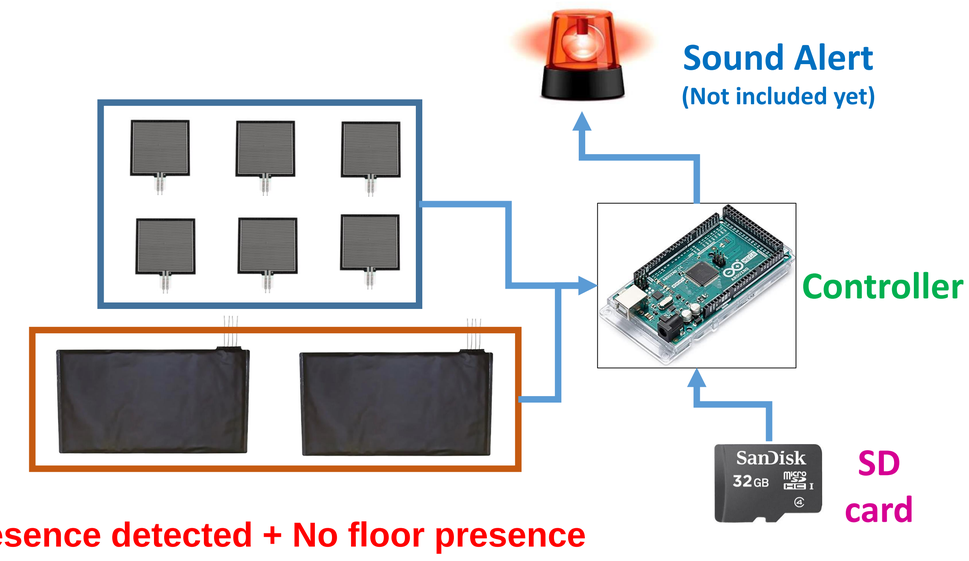
Introduction

Inpatient fall prevention has been an area of concern for nursing for the last 60 years and is also one of the 6 International Patient Safety Goals (IPSGs). In 2019, 46 inpatient falls were reported in paediatric wards in various places like Cot, Bed, Baby Bath, Couch, Chair within KK Women's and Children's Hospitals. The Baby Bath area, with 4 falls, was of particular concern due to an ***increased number of incidents*** in consecutive months; up from 0 over last 2 years.

A taskforce was set up to assess the risks and identify root causes in this new hot-zone and explore innovative technologies to ***monitor*** and ***influence*** caregiver behavior for fall prevention at bath area. A weight sensor solution was developed & evaluated.

Methodology

Concept



Walkaway = Bed presence detected + No floor presence

Physical Set-up in Bathing area

Ward 56 set up

Ward 66 set up

Simulation Scenarios

Proper supervision
Floor: 1
Bed: 1

No supervision
Floor: 0
Bed: 1

Washing
Floor: 0
Bed: 0

Improper supervision
Floor: 1 or 0
Bed: 0

Not central
Floor: 1 or 0
Bed: 1

*Near miss event are scenarios that are highlighted in **RED**

Results

Root Causes Analysis was performed

Identified Root Cause:

1. New and unfamiliar environment leading to unawareness in recognizing potential risks and anticipating fall. (>>Introduce clearer ward briefing)
2. ***Caregiver unconsciously moving away or position at an unsafe distance from the patient***
3. Unclear signage in reminding caregiver to stay with child at all times. (>>Better signages)
4. Incomplete preparation of bath requisites. (>>Introduce clearer ward briefing)

Audit Validation (1 day - Feb 2020)

- Some Caregiver were spotted moving away to wash hands
- Hawthorn effect may undermine audit

Device Results

Caregiver walkaway duration	No. of times detected	
	Feb 2020	Mar 2020
	7 hours	21.5 hours
<5s	38	86
5-9s	6	6
10-14s	2	6
15-20s	3	4
>20s	3 (27s,38s, 60s)	7 (47s, 22s ,45s, 37s, 24s, 24s, 151s)
Walkaway Rate	**2 incidents /hour**	**1.06 incidents/ hour**

Paused for 6 months due to COVID lockdown

Caregiver walkaway duration	No. of times detected	
	Sep 2020	Oct 2020
	8 days	18 days
<5s	41	493
5-9s	1	33
10-14s	0	4
15-20s	0	4
>20s	2	7 (2 most likely very heavy item)
Walkaway Rate	**0.02 incidents/ hour**	**0.11 incidents/ hour**

- Walkaway Rates were *alarmingly high* in Feb 20 and Mar 20
- COVID lockdown seemed to change caregiver behaviour to be more cautious, likely because only 1 caregiver was allowed. Other intervention like "better signages" were also put up in this period which may contribute to better caregiver behaviour.
- No reported bath area falls were reported in 2020 and 2021 with low walkaway rate

Conclusion

The team developed and presents a viable method to measure and monitor caregiver walkaway rates. This setup is the first known tool that can quantitatively help with the management of caregiver behavior in baby bath setting and can be used to measure intervention effectiveness (ie alarms, posters, area-redesign) *without additional nursing effort*.